TITLE: SYSTEM AND METHOD OF IP PACKET FORWARDING ACROSS DIRECTLY
CONNECTED FORWARDING ELEMENTS
INVENTORS NAME: Hormuzd M. Khosravi et al.
DOCKET NO.: 884.436US1

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Fig.1

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Fig.2

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~300

BEGIN

310

VALIDATE PACKET HEADER
FROM CHECKSUM

320

DECREMENT TTL FIELD

330

RECALCULATE CHECKSUM

340

LOOK UP ROUTE, INCLUDING
EGRESS PORT

350

FORWARD PACKET IN REFERENCE
TO EGRESS PORT

360

IS PACKET AT
DESTINATION ?

NO

YES

END

Fig.3

~400

BEGIN

410

COMPLETE ENCAPSULATION
OF PACKET

420

TRANSMIT THE PACKET
THROUGH THE EGRESS PORT

END

Fig.4

TITLE: SYSTEM AND METHOD OF IP PACKET FORWARDING ACROSS DIRECTLY
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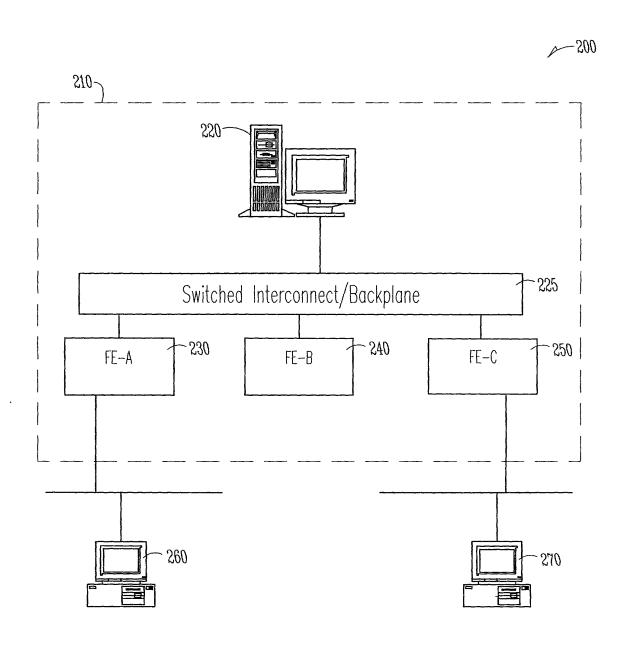DOCKET NO.: 884.436US1

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~500

BEGIN

510
APPLY SWITCH-LABEL
TO PACKET

520
FORWARD PACKET TO
EGRESS FE

530
REMOVE SWITCH-LABEL FROM
PACKET

540
COMPLETE ENCAPSULATION
OF PACKET

550
TRANSMIT PACKET

END

Fig.5

~600

BEGIN

610
GENERATE ROUTING
TABLE FROM ROUTING
UPDATE MESSAGE

620
DETERMINE PRESENCE
OF EGRESS PORT IN
A FE

630
ALTER THE ROUTING TABLE
IN REFERENCE TO THE
PRESENCE

END

Fig.6

TITLE: SYSTEM AND METHOD OF IP PACKET FORWARDING ACROSS DIRECTLY
CONNECTED FORWARDING ELEMENTS
INVENTORS NAME: Hormuzd M. Khosravi et al.
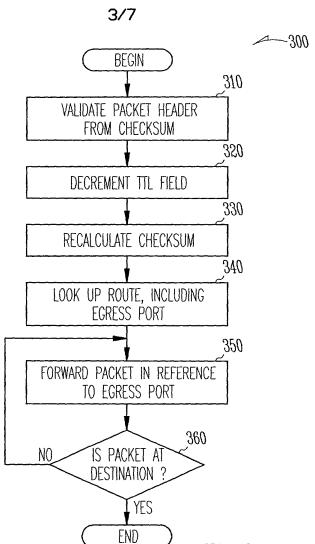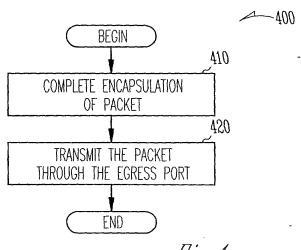DOCKET NO.:   884.436US1

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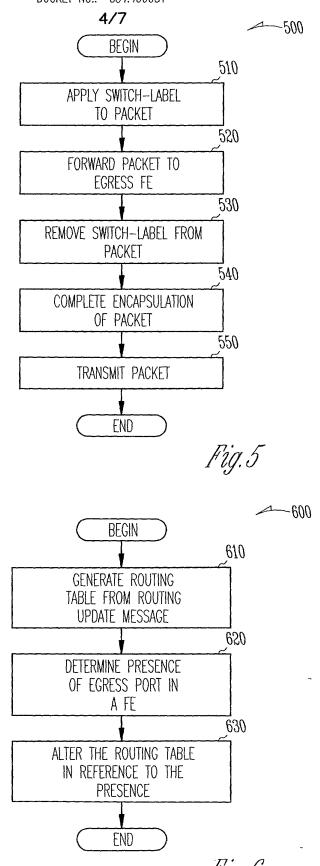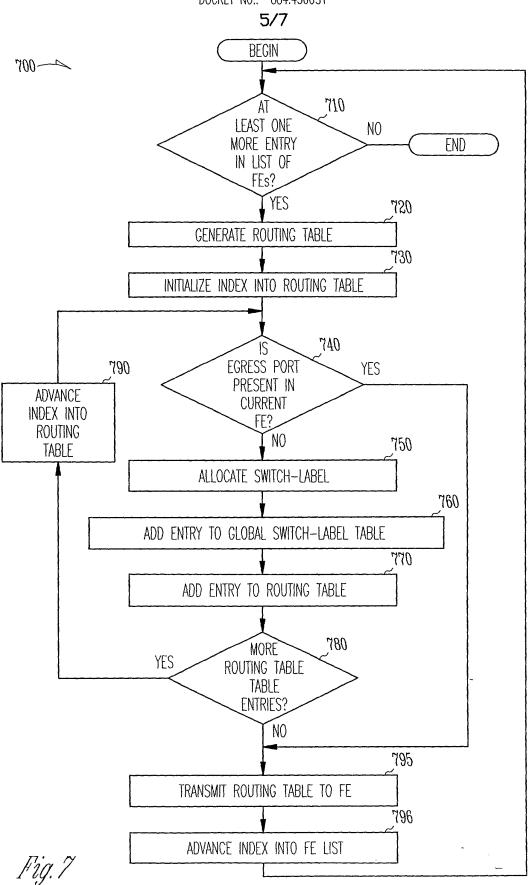700 ⟶

```
                         ┌──────────┐
                         │  BEGIN   │
                         └──────────┘
                              │
                              ▼
                      ╱───────────────╲        710
                     ╱       AT         ╲
                    ╱    LEAST ONE       ╲   NO    ┌─────────┐
                    ╲   MORE ENTRY       ╱─────────│   END   │
                     ╲   IN LIST OF     ╱          └─────────┘
                      ╲     FEs?       ╱
                       ╲──────────────╱
                              │ YES
                              ▼                    720
                  ┌──────────────────────────┐
                  │  GENERATE ROUTING TABLE   │
                  └──────────────────────────┘
                              │                    730
                  ┌──────────────────────────┐
                  │ INITIALIZE INDEX INTO     │
                  │     ROUTING TABLE         │
                  └──────────────────────────┘
                              │
                              ▼
                      ╱───────────────╲        740
       790          ╱       IS         ╲
  ┌──────────┐     ╱   EGRESS PORT      ╲   YES
  │ ADVANCE  │    ╱    PRESENT IN        ╲─────────┐
  │ INDEX INTO│   ╲     CURRENT         ╱          │
  │ ROUTING  │    ╲       FE?          ╱           │
  │  TABLE   │     ╲───────────────╱               │
  └──────────┘            │ NO                     │
       ▲                  ▼                750     │
       │      ┌──────────────────────────┐         │
       │      │    ALLOCATE SWITCH-LABEL  │         │
       │      └──────────────────────────┘         │
       │                  │                760     │
       │      ┌──────────────────────────┐         │
       │      │ ADD ENTRY TO GLOBAL       │         │
       │      │   SWITCH-LABEL TABLE      │         │
       │      └──────────────────────────┘         │
       │                  │                770     │
       │      ┌──────────────────────────┐         │
       │      │ ADD ENTRY TO ROUTING TABLE│         │
       │      └──────────────────────────┘         │
       │                  │                         │
       │                  ▼        780              │
       │          ╱───────────────╲                 │
       │  YES    ╱     MORE         ╲                │
       └────────╱   ROUTING TABLE    ╲               │
                ╲     TABLE          ╱               │
                 ╲   ENTRIES?       ╱                │
                  ╲───────────────╱                 │
                         │ NO                        │
                         ▼◄──────────────────────────┘
                              │                795
                  ┌──────────────────────────┐
                  │ TRANSMIT ROUTING TABLE    │
                  │        TO FE              │
                  └──────────────────────────┘
                              │                796
                  ┌──────────────────────────┐
                  │ ADVANCE INDEX INTO FE LIST│
                  └──────────────────────────┘
```

Fig. 7

800

BEGIN

810

APPLY SWITCH–LABEL
TO PACKET

820

TRANSFER PACKET
BETWEEN FES USING
THE SWITCH–LABEL

END

Fig.8

900

BEGIN

910

GENERATE
SWITCH–LABEL
TABLE FOR
EACH FE

920

TRANSMIT SWITCH
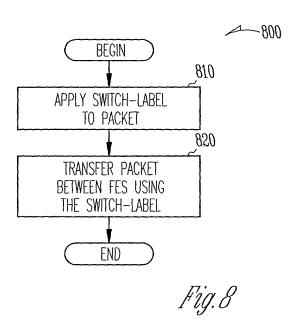LABEL TABLES
TO CORRESPONDING
FES

END

Fig.9

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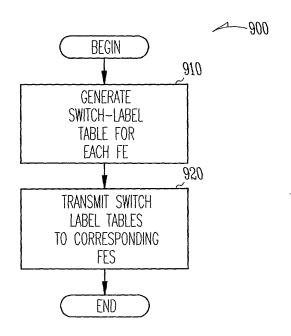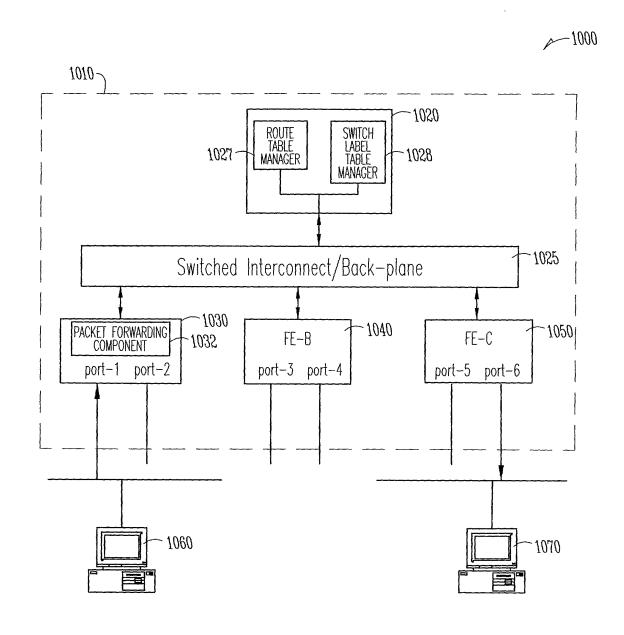DOCKET NO.:   884.436US1

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1000

1010

1020

ROUTE
TABLE
MANAGER
1027

SWITCH
LABEL
TABLE
MANAGER
1028

Switched Interconnect/Back-plane   1025

PACKET FORWARDING
COMPONENT   1030
1032

port-1   port-2

FE-B   1040

port-3   port-4

FE-C   1050

port-5   port-6

1060

1070

Fig. 10